CITY OF SANTA BARBARA

Joint Downtown Parking Committee and Transportation & Circulation Committee Meeting

Staff Report

DATE: May 13, 2010

TO: Downtown Parking Committee (DPC) Members and the Transportation Circulation Committee

FROM: Robert J. Dayton, Principal Transportation Planner

SUBJECT: Downtown On-Street Parking Survey

RECOMMENDATION:
Hear a presentation by Transportation staff on the results of the Downtown On-Street Parking Survey conducted in June 2009.

Background
We have attached a memorandum from Nelson/Nygaard Consulting Associates entitled Summary of Downtown Santa Barbara On-Street Parking Survey. Nelson/Nygaard is one of the transportation consultants that was hired for *Plan Santa Barbara*. We will present the findings of the memorandum at the meeting.

The Transportation & Circulation Committee also expressed an interested in the Downtown Parking Survey

Attachment

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M E M O R A N D U M

To: Rob Dayton

From: Jeremy Nelson and Magnus Barber

Date: June 5, 2009

Subject: Summary of Downtown Santa Barbara On-Street Parking Survey

Executive Summary

At the direction of the City of Santa Barbara, Nelson\Nygaard conducted survey of on-street parking in downtown Santa Barbara and downtown-adjacent neighborhoods.

The purpose of this survey was to gain a better understanding of on-street parking in downtown Santa Barbara- as was identified in the *Plan Santa Barbara Existing Conditions Report* the City has good data for downtown parking lots and garages (both total supply and occupancy patterns), but no recent data on on-street parking.

For this reason, the survey provided a field-based estimate of existing on-street parking spaces (supply) and surveyed both how many spaces were utilized throughout the day (occupancy) and how cars were parked in each space (length of stay). At the request of City staff, Nelson\Nygaard also collected data on residential permit utilization.

The survey was conducted Friday 3/20/09 and Saturday 3/21/09. Nelson\Nygaard staff managed the data gathering process and conducted an inventory of the parking supply. In addition, Nelson\Nygaard supervised a team of surveyors (consisting of both temporary labor and City staff) to carry out the parking survey. The weather during the survey was unusually cool and overcast, and so the levels of occupancy observed should be viewed as conservative.

Finally, Nelson\Nygaard analyzed and mapped the on-street parking data. As discussed in greater detail in this memo, key findings include:

- **Occupancy:** At the peak demand hour for the entire on-street parking system, parking demand was highly variable, with some blocks at full capacity and some blocks with excess capacity. This pattern was observed at the peak demand hour for both Friday (see Appendix A) and Saturday (see Appendix B). This finding suggests that current on-street parking management policies are not succeeding in geographically balancing supply and demand, resulting in on-street parking being difficult to find on certain blocks while readily available a few blocks away.

- **Length of Stay:** A significant portion of vehicles were found to park for considerably longer than the posted time limits. This pattern was observed on for both Friday (see Appendix C) and Saturday (see Appendix D). This finding suggests that current on-street parking management policies are not promoting the most efficient utilization of the limited on-street parking supply, resulting in the short-term curb spaces intended for downtown visitors and shoppers being used for long-term parking by commuters.

- **Permit Utilization:** Very few vehicles were observed using residential parking permits during the survey periods.

Methodology

Parking Supply Inventory

An inventory of parking spaces was conducted by examining parking regulations on all block faces in the study area. Special note was made of no parking zones, accessible parking spaces, and time limits and other restrictions.

Because most on-street parking in downtown Santa Barbara is not striped, the total number of available parking spaces was estimated by measuring the length of curb between the parcel lines at each corner of each block where parking is allowed. A geo-referenced CAD file was available for most of the downtown area, which was used to find the length on each block consisting of curb cuts or designated as no parking. Outside the downtown commercial area, several representative blocks were measured to find the typical amount of parking lost to curb cuts, fire hydrants etc. in different types of neighborhoods. From this the curb length available to parking on each block was generated. Each of these curb lengths were divided by 20 feet, a typical length for a parking space.

Each block face was then assigned a unique ID number. GIS software was used to determine the length of each block face. By dividing the total curb length available for parking by the average length of a parking space, the number of spaces on each block face could be estimated.

The actual number of parking spaces on a street face may vary somewhat, depending on how tightly cars are packed and the types of vehicles parked on that block at that time. For example, the field-estimate methodology may estimate fewer spaces than are actually available if there are a disproportionate number of small vehicles parked on a particular block or if vehicles are parked very close together. Conversely, if there is a disproportionate number of longer vehicles parked on a particular block or if vehicles are parked very far apart, then the field-estimate methodology may estimate more spaces that are actually available. This variability “averages out” across the 88-block survey area and the 2-day survey period.

Bearing the above limitations in mind, the estimated total supply in the survey area is 4,250 spaces and the supply within the 75-minute zone is 1,680 spaces.

Parking Occupancy and Length of Stay Survey

The parking survey was carried out on Friday 3/20/09 from 11 am to 7 pm, and Saturday 3/21/09 from 3 pm to 11 pm.

The survey area was bounded to the west and east by the 101 Freeway and Garden Street, and to the north and south by Sola Street and the 101 freeway, an area of approximately 88 blocks.

20 temps and 2 city staff carried out bi-hourly surveys within the survey area. The number of staff required was based on previous survey experience in dense urban environments with high utilization of on-street parking.[1] Surveyor recorded the number of vehicles parked on each block (to be used to derive occupancy) and the license plate of each vehicle (to be used to derive length of stay).

All temps currently lived in Santa Barbara and many had lived there most of their lives. Their local knowledge provided insight into traffic and parking patterns and what could be considered normal activity levels; for example, the temps provided the following anecdotal information:

- Most thought the levels of pedestrian traffic on State Street were unusually low and temps attributed this to the unseasonal cool and overcast weather during the survey.

- With regards to parking, the temps observed that most visitors either park off-street downtown or park in the public lots south of 101.

- Temps reported that motorists perceive that enforcement is only robust for a few blocks on either side of State Street and so in other areas of downtown people park for extended times at white and green curbs without being afraid of getting a ticket.

The methodology used to calculate average duration of stay might best be explained by an example:

Say a block has three parking spaces and was surveyed four times at two hourly intervals, and the 3 digits of the license plates are recorded:

	11 am	**1 pm**	**3 pm**	**5 pm**
Space 1	ABC	ABC	ABC	ABC
Space 2	DEF	<empty>	JKL	JKL
Space 3	GHI	GHI	<empty>	<empty>

Here we can see that there are a total of 9 cars parked for two hours per survey period, but there are only 4 unique license plate IDs. So the average time of stay per unique vehicle is 2 hours x 9 vehicles/4 unique vehicle IDs = 4.5 hours. The distribution is:

8 hours – 1 vehicle

[1] Future surveys could be carried out either with fewer staff, or with more frequent survey periods, as the relatively low level of occupancy and extensive no parking areas meant that surveyors could maintain higher travel speeds than anticipated.

6 hours – 0 vehicles

4 hours – 2 vehicles

2 hours – 1 vehicle

It is common practice to define the length of stay as one full survey period for each time a vehicle is observed, though this is a simplification. It is only possible to know the location of a vehicle when it is present in a space at the time a surveyor passes it. It is not possible to know if it arrived a few minutes after the previous survey registered an empty space, or a few minutes before the current survey. Likewise, it is not possible to know how long a vehicle stays after it was counted by the surveyor – did it leave a few minutes later, or only a few minutes before the following survey measurement? Hence, some uncertainty is inevitable, though it is minimized by more frequent survey intervals. The frequency of survey intervals needs to be balanced against the available budget for each survey – as shorter survey intervals require more surveyors to cover any given area.

Findings

Occupancy

The observed peak demand hour for the on-street parking system for Friday was:

- 1 pm for the entire survey area (2,230 cars, 52%)
- 11 am within the 75 minute zone (977 cars, 58%)

While the observed occupancy at both Friday 3 pm and Friday 5 pm was lower than the Friday peak demand hour, the 5 pm occupancy was higher than at 3pm and almost as high as the peak. It is possible that occupancy later on Friday (i.e. after the end of the Friday survey period at 7pm) was higher than the observed Friday peak occupancy.

The observed peak demand hour for the on-street parking system for Saturday was:

- 7 pm for the entire survey area (2,430 cars, 57%)
- 7 pm within the 75 minute zone (1,062 cars, 63%)

Table 1 summarizes the occupancy for all survey periods. Occupancy was generally higher on Saturday than on Friday.

Table 1: Level of Occupancy, Friday and Saturday

Area	Friday				Saturday			
	11:00 AM	1:00 PM	3:00 PM	5:00 PM	3:00 PM	5:00 PM	7:00 PM	9:00 PM
Survey area	52%	52%	49%	50%	49%	52%	57%	52%
75-minute zone	58%	56%	57%	54%	48%	50%	63%	58%

On both days, occupancy was higher in the streets within a few blocks of State Street throughout the length of the survey area from Gutierrez Street to Sola Street. Here there were several areas where multiple blocks were between 75 - 100% occupancy, meaning that it would be challenging for visitors to find a space. The largest of these areas was seen on Saturday around the Paseo Nuevo Shopping Center, both to the west and the east. On Saturday there was also a large group of high occupancy blocks between Sola Street and Victoria Street, from De la Vina Street to Anacapa Street. See occupancy maps in Appendices A and B, showing the parking occupancy for each block at the peak demand hour for each day of the survey. It is likely occupancy in and near these popular areas would have been even higher had the weather not been cool and cloudy during the survey.

The high variability of parking demand at the peak demand hour (with some blocks at full capacity and some blocks with excess capacity) suggests that current on-street parking management policies are not succeeding in geographically balancing supply and demand, resulting in on-street parking being difficult to find on certain blocks while readily available a few blocks away. At the most popular destinations with high on-street occupancy, visitors may need to cruise to find on-street parking. This is inconvenient for visitors, and the additional traffic causes unnecessary pollution and potentially congestion.

The *Plan Santa Barbara Existing Conditions Report* showed that the there was surplus off-street parking capacity even at peak demand hour for the off-street parking system. Changes to on-street parking management including demand-responsive pricing at the appropriate level would encourage long-term parking to move to off-street facilities or to blocks with on-street capacity, and increase turnover of curb spaces for those visitors seeking short-term parking. Best practices suggest that the price should be set so that each block always has 15% of spaces available. This ensures that on-street parking is available for short-term parkers such as visitors to restaurants or retail shopping, while long-term parkers such as employees are encouraged to park further away from the downtown core or in off-street facilities.

Average Duration of Stay

A significant portion of vehicles were found to park for considerably longer than the posted time limits.

Average duration of stay on Friday was:

- Survey area: 3 hours and 6 minutes
- 75 minute zone: 2 hours and 23 minutes
- Outside the 75 minute zone: 3 hours and 46 minutes

Average duration of stay on Saturday was:

- Survey area: 3 hours and 22 minutes
- 75 minute zone: 2 hours and 33 minutes
- Outside the 75 minute zone: 4 hours and 6 minutes

See the length of stay maps in Appendices C and D, showing the average length of stay per block for Friday and Saturday. Note that almost all blocks show an average length of stay greater than two hours.[2]

As could be reasonably expected, the longest average stays were seen in the residential neighborhoods to the west of downtown and bordering the 101 freeway, where there are no time limits. A large proportion of these blocks had an average stay of four to six hours.

Overstay of Time Limits

As can be seen from the average duration of stay, a significant portion of vehicles were found to overstay the posted time limits in the 75- and 90- minute zones. Very few vehicles were observed with residential parking permits, except as noted below.

The percentage of vehicles overstaying time limits varied between 30 - 70% of vehicles parked, depending on the block. This is relatively conservative and includes only vehicles parked for 2 hours or more[3]. That means a 30-minute overstay in the 90-minute zones and a 45-minute overstay in the 75-minute zones. If shorter overstays had been captured the number of violations would have been higher still.

This finding suggests that current on-street parking management policies are not promoting the most efficient utilization of the limited on-street parking supply, resulting in the short-term curb spaces intended for downtown visitors and shoppers being used for long-term parking by commuters.

The intention of time-limited parking is usually to preserve premium on-street parking close to popular destinations as short term parking for visitors. The long average duration of stay could either indicate that on-street parking is being used by employees at nearby businesses, in which case short term visitors will find availability of parking to be limited, or it could indicate that visitors prefer to stay for longer than the time limit. In the first case, employees should be encouraged not to park in short term parking, for example by making this parking unattractive to long term use or by implementing a transportation demand management program for downtown businesses that would help commuters transition to a different mode of transportation. In the latter case, local businesses might be losing customers if their patrons feel pressured to return to their vehicles.

The data also shows that some drivers moved their vehicles within the same block or nearby as a way of working around time restrictions. This is technically illegal and should be considered a

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[2] For this analysis, the 75-minute zone was assumed to be bordered by Victoria Street to the north, Santa Barbara Street to the east, up to but not including De la Vina to the west and Gutierrez-Motor Way-Parker Way-Chapala-Cota to the south. This is a simplification, since the area is not uniformly marked as 75 minutes, but also contains many short segments of various types of short stay parking (white, green and yellow curbs). This simplification should not distract from the central finding that the average duration of stay for all types of parking within that area was significantly in excess of posted time limits for both survey days. Most blocks in the downtown area had average stays of two to three hours.

[3] Given the 2-hour sample periods, it is not possible to say anything about events on a shorter time scale than 120 minutes. But it does mean that if a vehicle is observed for 2 consecutive periods, then it definitely parked too long. It is necessary to sample at least twice the frequency of the most frequent event, but doing surveys at 37.5 minute or 45 minute intervals would not be practical.

violation of time limits since it is effectively using the short-term parking system for long-term parking. This type of violation is difficult to enforce against, because the number of parking control officers required for robust enforcement is impractical.

Newer meter technologies or occupancy sensors can relay back to a central server whether a parking space is occupied and for how long. In addition, enforcement vehicles with automated license plate reader technology such as the City's new AutoVue system, linked to a database of parking restrictions, would potentially be able to enforce against the "time limit shuffle." These technologies are expensive, though increased citation revenue can over time make it revenue neutral. Many cities have found that a more effective way to manage on-street parking is to eliminate time limits and implement paid parking in order to encourage higher turnover and promote better utilization of public streets.

The following table summarizes the advantages and disadvantages of solving the overstay of time limits either by increased enforcement or by eliminating time limits and implementing paid parking.

Increased Enforcement		Paid Parking	
Pro	Con	Pro	Con
No up front capital investments necessary	Substantial cost increase out of proportion with increased revenue from citations	Low running costs	Potentially significant up front capital investment
	Time limit continues to discourage visitors from staying as long as they like	Visitors can stay as long as they wish	
	Increased enforcement does little to increase availability of parking	When priced correctly, it will ensure that there is always parking available where and when a short-term parker needs it	
	Citation revenue is unlikely to cover enforcement costs, let alone provide revenue for downtown improvements.	Parking revenue can be reinvested in the downtown area to provide improved amenities, better maintenance etc.	

Permit Utilization

Very few parked vehicles were observed with residential parking permits. In general those permits that were observed were seen in residential areas to the west of downtown, with some exceptions. The vast majority of blocks observed did not have any vehicles displaying residential permits.

For example, there was a high proportion of vehicles displaying residential parking permits in the blocks immediately to the west of the Paseo Nuevo Shopping Center, particularly along De la Guerra, Ortega and blocks branching off these, between Chapala Street and Bath Street. These vehicles also parked for considerable lengths of time, resulting in high average lengths of stay (from just less than three hours to over four hours). For more information, see the length of stay maps in Appendices C and D and the data analysis master spreadsheet tabs routes 10 and 17.

Conclusions

The central findings of the parking survey are as follows:

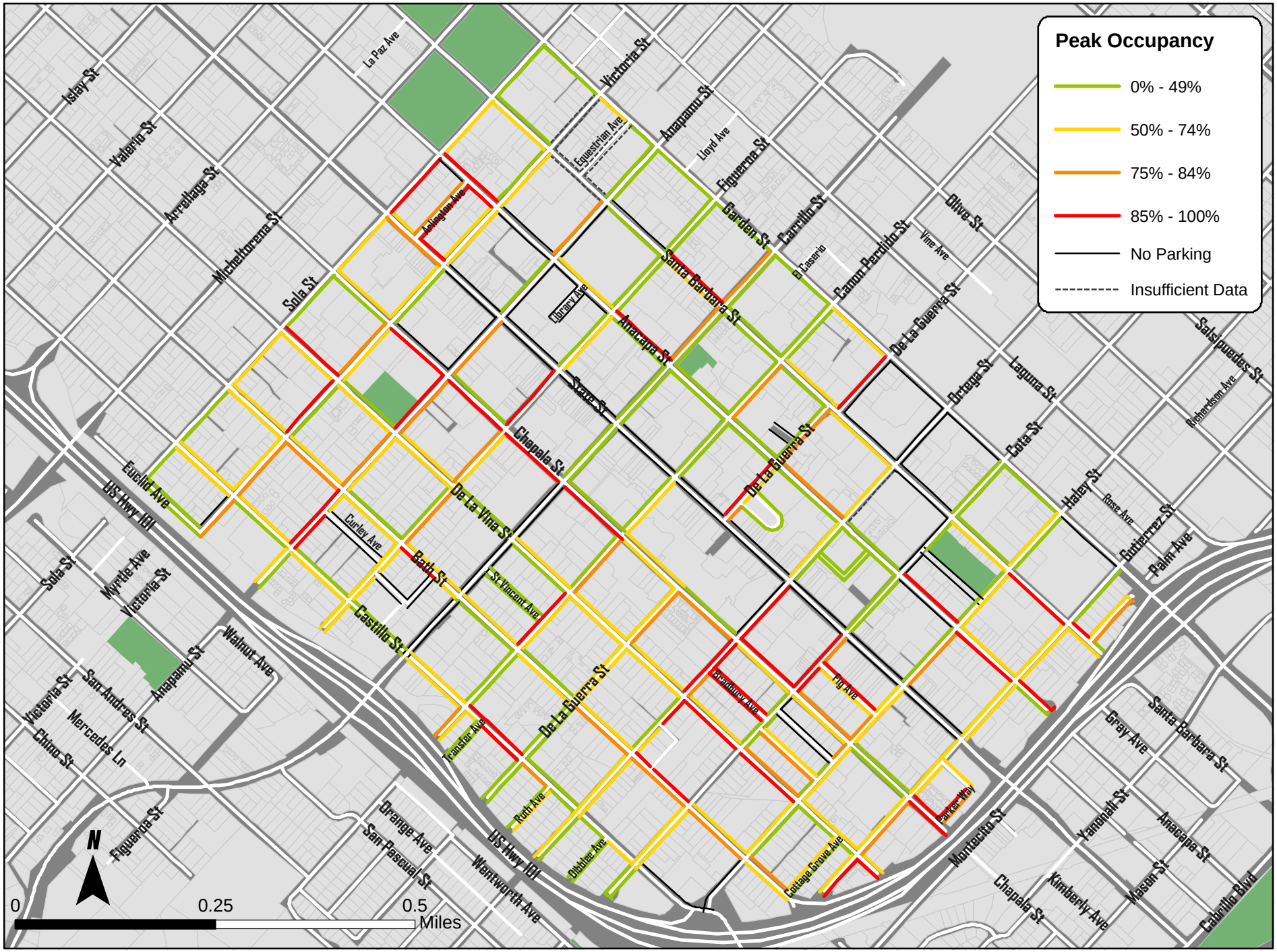
- Current parking management policies are not discouraging parkers from staying significantly longer than the posted time limits.
- As a whole there is plenty of on-street parking available in downtown Santa Barbara, even at the peak demand hour; however, usage is not uniformly distributed.
- Residential permits do not appear to be frequently used to park for extended periods in the downtown area.

Based on these findings, the City of Santa Barbara might consider the following policies to make best use of available public street space:

- Relax or eliminate time limits, which do not appear to be having the desired effect of managing occupancy or turnover.
- The relative prices of on- and off-street parking ought to give long term parkers an incentive to park off-street.
- Implement demand-responsive paid parking on streets with high parking demand to:
  - Ensure better availability of on-street parking for all visitors.
  - Minimize “cruising” for free parking.
  - Encourage a balancing of parking demand and supply and a shift to underutilized streets and off-street parking near the most popular destinations.
  - Encourage employees not to park on-street all day, taking up valuable on-street spots.

Appendix A: Peak Occupancy, Friday

Parking - Friday Peak Hour Occupancy (1PM)



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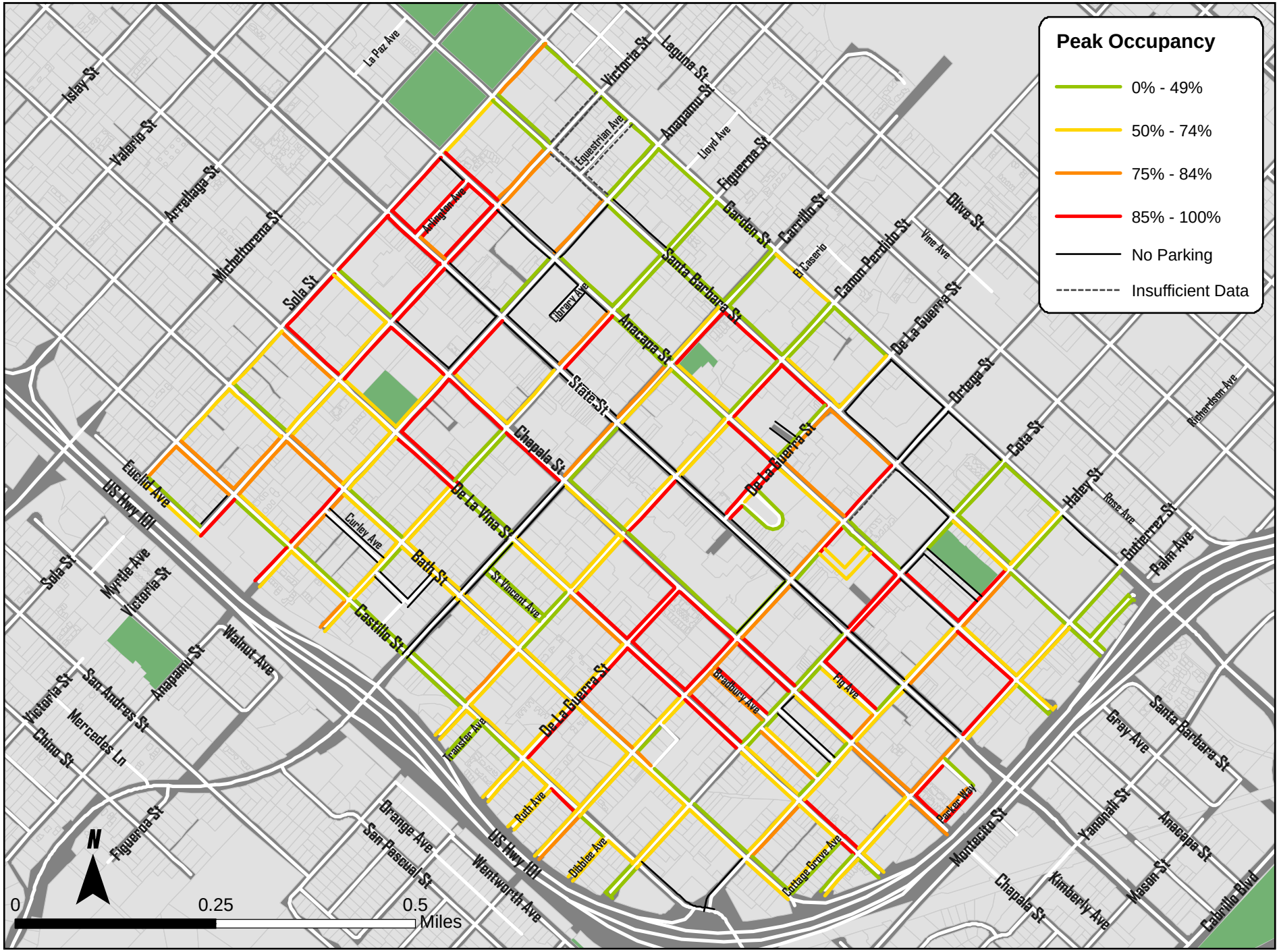
GIS Data Source: City of Santa Barbara

Appendix B: Peak Occupancy, Saturday

Parking - Saturday Peak Hour Occupancy (7PM)



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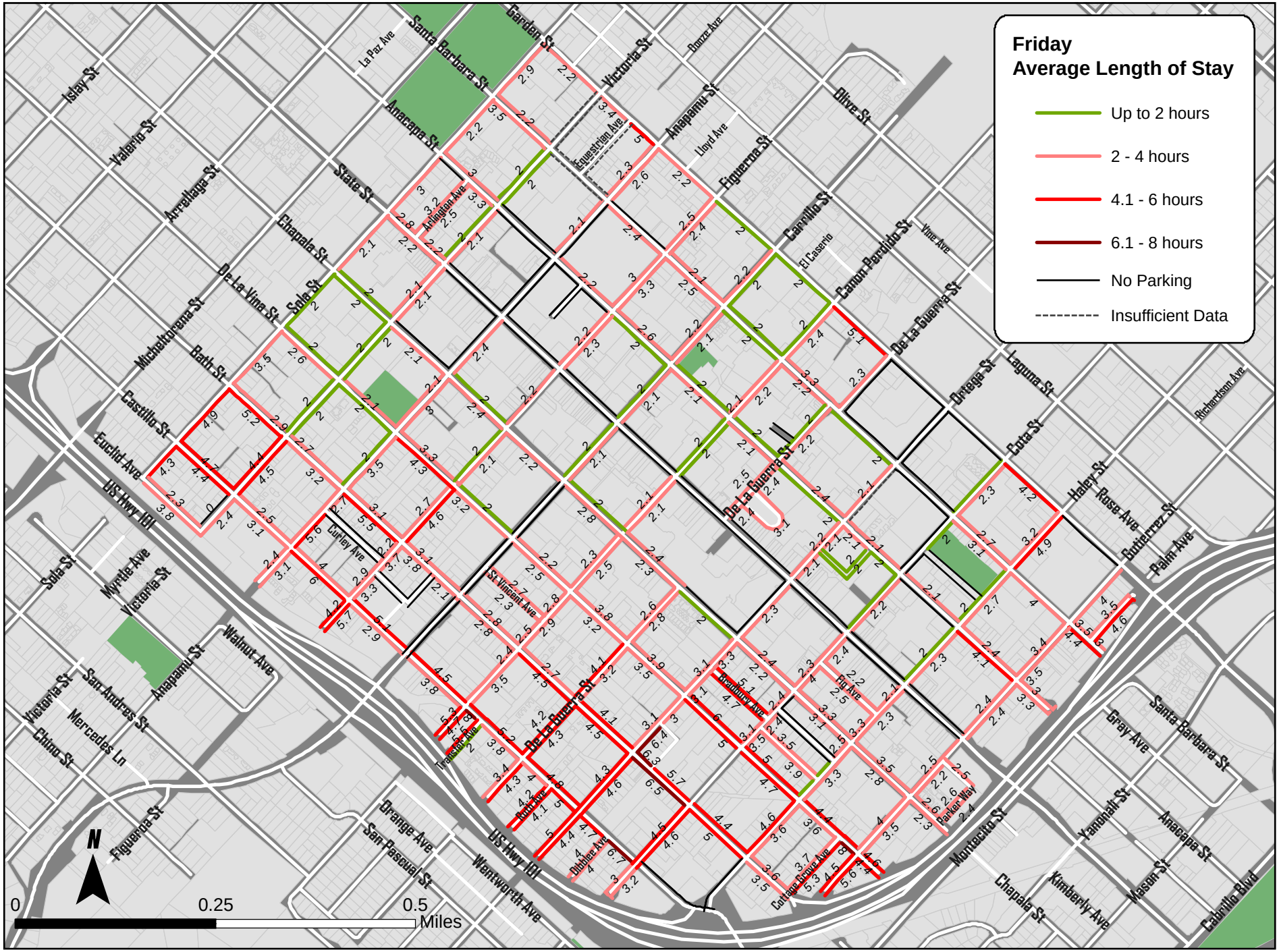
GIS Data Source: City of Santa Barbara

Appendix C: Average Length of Stay, Friday

Parking - Friday Average Length of Stay



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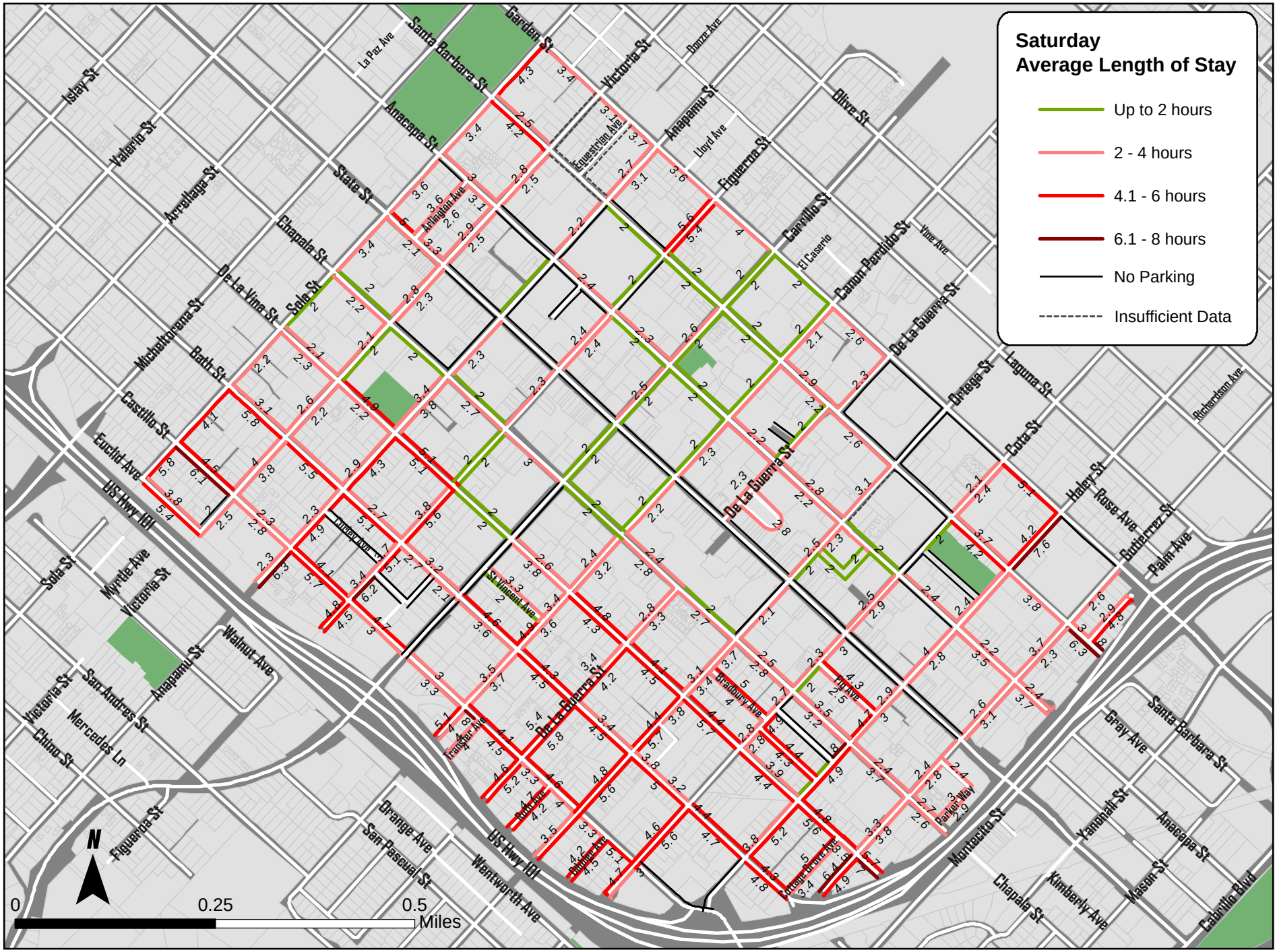
GIS Data Source: City of Santa Barbara

Appendix D: Average Length of Stay, Saturday

Parking - Saturday Average Length of Stay



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GIS Data Source: City of Santa Barbara